

# Arsenal's TNT waste: A time bomb?

Army eyes cleanup methods; tainted groundwater feared

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The Joliet Army Ammunition Plant quit producing TNT in 1974 after more than three decades of arming the American military machine, but it has left behind a long and stubborn legacy.

The plant is on the federal government's national priority list of pollution sites to be cleaned up, said Capt. Steve Bird of the Army's Toxic and Hazardous Materials Agency.

Most of the waste at the plant is a byproduct of TNT production called "red water" because the nitrates left over from TNT create a

red or pink solution when combined with water.

More than 50 concerned area residents traveled to the plant, about 15 miles south of Joliet at Illinois 53 and Hoff Roads, to hear plans to remove waste products from the soil. Most were concerned about whether the water supply was contaminated.

Others came for a one-hour bus tour of the 23,000-acre site to see the mysterious plant they had only heard rumors about.

Still others were former employees of Uniroyal, the operator of the plant, who came to visit the place where they worked to produce munitions during World War II and

the Korean and Vietnam conflicts.

What they encountered during the nearly two-hour briefing was a dizzying bombardment of bureaucratic acronyms and policy statements from the U.S. Army, the federal Environmental Protection Agency and Argonne Laboratories.

## More waiting, testing

The bottom line: Cleanup will be studied until 1993 to determine how much needs to be cleaned and how it should be done. The Army, EPA, Argonne and the universities of Notre Dame and Illinois will work for the next three years to study the site to determine how

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extensive contamination is and the best ways to clean up the mess.

About 150 wells have been drilled on the site over the years to test the water, and officials said they don't believe any contaminants have spread beyond the plant's boundaries. Testing will be done from the center of the plant outward to insure that contaminants can be traced to the plant and do not exist naturally in the surrounding area.

Large-scale cleanup probably won't begin until 1994 or 1995, officials said.

There were no complete answers to residents' questions of whether their water is contaminated. Officials only said that many of the private wells surrounding the arsenal would be surveyed before the studies are completed in three years.

When one woman asked if she

should have her water tested at a private lab in the meantime, she was told by an EPA spokesman to wait until the government did it for free. He did not know, however, when such testing would begin.

Preliminary studies show the soil has a high proportion of clay that makes vertical movement to the bedrock and groundwater difficult. One problem, however, is that solid deposits of TNT waste have been found on top of the soil.

Officials said they hope that contaminants were washed overland during rains, emptying into rivers, or that they did not seep down to the water table.

## Recurring problem

The arsenal story is no different than that of practices in industrial America, which created acid rain and severe water pollution. Resources were used, waste produced and the environment damaged at a time when no one was aware of the implications.

"In World War II, the technology was to leave (red water) in the

ditch," said Lt. Col. Maurice Peterson, who oversees munitions facilities in Joliet and Burlington, Iowa. "Then the technology was to incinerate it, but that's expensive and it destroys all the organic material in the soil. Now we're looking for new technology."

Martha Lembcke, who lives near the arsenal between Joliet and Elwood, said, "I've lived here all my life, and I can't see the problem. We didn't worry about it 50 years ago. We were just concerned with getting our boys back home."

Until 1950, TNT-laden water ran in open troughs from processing stations to a red-water lagoon. The lagoon has been drained and now supports a grass field, although red water was standing in a nearby ditch Monday.

The Army's next step was to incinerate red water and contaminated soil in large incinerators at the plant, a move that only created a new problem. When the contaminants were burned, concentrated ash was left behind where it now

rests in huge piles on the site.

Officials are trying to find a way to dispose of the ash because it could still find its way into the soil and possibly the groundwater during rain storms.

## Possible solutions

Among the possible cleanup plans being studied by researchers at Notre Dame and Argonne is applying water and nutrients that would react with contaminated soil to remove the contaminants. Officials said the process, called bioremediation sequencing, is used to treat waste water and has been successful in Notre Dame laboratories.

Another approach would identify plants that thrive in the TNT-contaminated soil and would draw the contaminants out, making the soil useful and safe.

Argonne officials say that Notre Dame has been able to reduce contaminants in soil samples from Joliet to below EPA levels in 14 days. For the method to be cost-effective, the process needs to be reduced to seven days or less.